

June 12, 2018

Mr. Greg Studer Desert View Power 62-300 Gene Welmas Drive Mecca, CA 92254-0758

Subject: Quarterly CGA Units 1 and 2

Report Number: 002AS-320471-RT-412

Dear Greg:

This letter presents the results of the Continuous Emission Monitoring System (CEMS) quarterly test audit conducted by Dave Wonderly of Montrose Air Quality Services, LLC (MAQS), on May 30, 2018 MAQS was contracted by Desert View Power to perform this audit. The program consists of a Cylinder Gas Audit (CGA) for unit 1 and 2 on the NO_x, CO, SO₂, and O₂ monitors in accordance with 40 CFR Part 60 Appendix F Section 5.1.2.

The CGA comprised of challenging the entire unit CEMS, as close to the tip of the probe as possible, with NBS traceable gases of known concentration. The gases were injected at the probe through previously installed audit ports.

Two audit gases per monitor range were selected according to the requirements of Appendix F. Each monitor was challenged by each of its two gases three separate times. The accuracy was calculated two ways. By the percent difference between the actual known gas concentration and the average value read by the monitor, and the difference in ppm from actual known gas concentration and the average value read by the monitor. Results are shown in the attached tables (Tables 1 and 2).

The results of the CGA demonstrate that the CEMS was operating within the EPA quality assurance specification of either 15% accuracy or 5 ppm difference for all parameters. All data, including gas bottle certifications and monitor response data sheets, are provided as an attachment. If you have any questions or comments, please do not hesitate to call me at 714-279-6777.

Sincerely,

Dave Wonderly Program Manager

David Wand

Montrose Air Quality Services, LLC.

DW/rcr Attachments

TABLE 1
CYLINDER GAS AUDIT RESULTS
UNIT 1
DESERT VIEW POWER
May 30, 2018

Parameter	Accuracy, % of Gas Value	Accuracy Acceptance Criteria	Difference From Gas Value, ppm	Difference Acceptance Criteria	Status
, arameter	70 01 010 14,10	27,127,12	FP	3.11.0.7.0	
SO ₂ Low Range (mid span)	-10.2%	15%	-2.77	5 ppm	Pass
SO ₂ Low range (low span)	-13.3%	15%	-1.66	5 ppm	Pass
NO _x Low range (mid span)	0.3%	15%	0.16	5 ppm	Pass
NO _x Low range(low span)	1.1%	15%	0.26	5 ppm	Pass
CO Low Range (mid span)	-6.2%	15%	-3.44	5 ppm	Pass
CO Low Range (low span)	-13.0%	15%	-3.24	5 ppm	Pass
O ₂ (mid span)	0.1%	15%	N/A	N/A	Pass
O ₂ (low span)	0.4%	15%	N/A	N/A	Pass
SO ₂ High Range (mid span)	0.5%	15%	1.41	5 ppm	Pass
SO ₂ High Range (low span)	4.0%	15%	5.04	5 ppm	Pass
NO _x High Range (mid span)	0.1%	15%	0.37	5 ppm	Pass
NO _x High Range (low span)	-0.7%	15%	-0.87	5 ppm	Pass
CO High Range (mid span)	-0.3%	15%	-0.81	5 ppm	Pass
CO High Range (low span)	1.7%	15%	2.13	5 ppm	Pass

^{*} Pass if accuracy less than 15% or within 5 ppm and O2 accuracy is less than 15%

TABLE 2
CYLINDER GAS AUDIT RESULTS
UNIT 2
DESERT VIEW POWER
May 30, 2018

A. S A. S.	Accuracy,	Accuracy Acceptance	Difference From Gas Value,	Difference Acceptance	
Parameter	% of Gas Value	Criteria	ppm	Criteria	Status
SO ₂ Low Range (mid span)	-7.8%	15%	-2.11	5 ppm	Pass
SO ₂ Low range (low span)	-7.4%	15%	-0.93	5 ppm	Pass
NO _x Low range (mid span)	-1.0%	15%	-31.11	5 ppm	Pass
NO _x Low range(low span)	0.1%	15%	0.01	5 ppm	Pass
CO Low Range (mid span)	-6.2%	15%	-3.42	5 ppm	Pass
CO Low Range (low span)	-3.0%	15%	-0.74	5 ppm	Pass
O₂ (mid span)	-0.5%	15%	NA	NA	Pass
O ₂ (low span)	0.0%	15%	NA	NA	Pass
SO ₂ High Range (mid span)	0.1%	15%	0.14	5 ppm	Pass
SO ₂ High Range (low span)	2.7%	15%	3.40	5 ppm	Pass
NO _x High Range (mid span)	0.0%	15%	0.00	5 ppm	Pass
NO _x High Range (low span)	0.5%	15%	0.68	5 ppm	Pass
CO High Range (mid span)	1.0%	15%	2.83	5 ppm	Pass
CO High Range (low span)	3.4%	15%	4.23	5 ppm	Pass

^{*} Pass if accuracy less than 15% or within 5 ppm and ${\rm O_2}$ accuracy is less than 15%

CYLINDER GAS AUDIT WORK SHEET

Client: DESERT VIEW POWER

Location: Mecca Date: 5/30/2018

Unit No: Data By:

DW

Data fo

NORMAL RANGE

	NOx	ppm	CO	ppm	SO2	ppm	02	2 %
Reference Gas	Point 1	Point 2						
Concentration	24.7	55.5	25	55	12.5	27.1	4.4	9.46
Replicate								
1	24.50	55.18	21.75	51.48	9.76	23.90	4.42	9.48
2	25.27	55.88	21.65	51.38	10.96	24.29	4.41	9.47
3	25.11	55.91	21.88	51.83	11.79	24.81	4.42	9.47
Average	24.96	55.66	21.76	51.56	10.84	24.33	4.42	9.47
Difference, ppm	0.26	0.16	-3.24	-3.44	-1.66	-2.77	n/a	n/a
Accuracy	1.1%	0.3%	-13.0%	-6.2%	-13.3%	-10.2%	0.4%	0.1%

Client: Colmac Location: Mecca Date: 5/30/2018

Unit No: 1 Data By: DW

HIGH RANGE

	NOx	ppm	co	ppm	SO2	ppm
Reference Gas	Point 1	Point 2	Point 1	Point 2	Point 1	Point 2
Concentration	128.5	282	123.3	274	125	277.0
Replicate						
1	127.16	282.22	124.86	272.68	122.00	277.85
2	127.67	282.26	125.47	273.33	133.58	276.42
3	128.07	282.62	125.95	273.55	134.54	280.95
Average	127.63	282.37	125.43	273.19	130.04	278.41
Difference, ppm	-0.87	0.37	2.13	-0.81	5.04	1.41
Accuracy	-0.7%	0.1%	1.7%	-0.3%	4.0%	0.5%

Client: Colmac Location: Mecca

Date: 5/30/2018

Unit No: 2 Data By: DW

CYLINDER GAS AUDIT WORK SHEET

NORMAL RANGE

	NOx	ppm	co	ppm	SO2	ppm	02	2 %
Reference Gas	Point 1	Point 2						
Concentration	24.7	55.5	25	55	12.5	27.1	4.4	9.46
Replicate								
1	24.19	54.79	24.15	51.91	11.04	24.91	4.40	9.42
2	25.09	55.19	24.23	51.54	11.82	25.13	4.40	9.42
3	24.86	54.93	24.39	51.28	11.86	24.92	4.40	9.41
		24.23						
Average	24.71	24.39	24.26	51.58	11.57	24.99	4.40	9.42
Difference, ppm	0.01	-31.11	-0.74	-3.42	-0.93	-2.11	n/a	n/a
Accuracy	0.1%	-1.0%	-3.0%	-6.2%	-7.4%	-7.8%	0.0%	-0.5%

Client: Colmac Location: Mecca Unit No: 2 Data By: DW

Date: 5/30/2018

HIGH RANGE

	NOx	ppm	co	ppm	SO2	ppm
Reference Gas	Point 1	Point 2	Point 1	Point 2	Point 1	Point 2
Concentration	128.5	282	123.3	274	125	277.0
Replicate						
1	128.54	281.83	126.92	276.41	123.85	276.44
2	129.47	281.82	127.60	276.93	130.25	276.64
3	129.52	282.35	128.07	277.14	131.10	278.35
Average	129.18	282.00	127.53	276.83	128.40	277.14
Difference, ppm	0.68	0.00	4.23	2.83	3.40	0.14
Accuracy	0.5%	0.0%	3.4%	1.0%	2.7%	0.1%

CYLINDER GAS AUDIT WORK SHEET

/2018 8:25 AM thru 5/30/2018 9:44 AM

Timestamp			n-1) CO nnn	rer 1) 02%	12) NOv nn	r2) SO2 nm	n 2) CO ppn	rer 2) O2
5/30/2018 8:27	1,19	2.29	0	4.43	1.92	0.39	0	4.41
5/30/2018 8:28	0.83	1.01	0	4.42	0.42	0	0	4.4
5/30/2018 8:29	1.02	0.45	0	4.72	2.44	0	0	5.32
5/30/2018 8:30	38.57	2.31	0	8.33	26.21	3.45	0	8.85
5/30/2018 8:31	44.07	5.31	0	8.44	26.39	4.86	0.05	8.18
5/30/2018 8:32	14.86	3.62	0	9.34	17.66	4.14	0.36	8.93
5/30/2018 8:33	3.7	1.85	0	9.48	1.96	0.98	0.64	9.41
5/30/2018 8:34	1.82	0.69	0	9.48	1.24	0.13	0.64	9.42
5/30/2018 8:35	2.46	0.42	0	9.03	1.56	0.13	0.73	8.43
5/30/2018 8:36	0.82	0	0	4.5	0.05	0	0	4.42
5/30/2018 8:37	0.64	0	0	4.41	1 0	0	0	4.4
5/30/2018 8:38	0.94	0	0	5.91	0.32	0	0	6.4
5/30/2018 8:39	1.69	0	0	9.46	0.97	0	0.6	9.41
5/30/2018 8:40	2.11	0	0	9.47	0.95	0	0.6	9.42
5/30/2018 8:41	1.96	0	0	8.06	1.03	0	0.32	7.48
5/30/2018 8:42	0.77	0	0	4.44	0.49	0	0	4.41
5/30/2018 8:43	0.51	0	0	4.42	0.07	0	0	4.4
5/30/2018 8:44	1.03	0	0	6.01	0.69	0	0	6.49
5/30/2018 8:45	1.94	0	0	9.46	1.36	0	0.41	9.4
5/30/2018 8:46	1.91	0	0	9.47	1.49	0	0.51	9.41
5/30/2018 8:47	3.45	0	1.42	6.59	6.21	0.43	5.49	5.51
5/30/2018 8:48	22.89	2.94	20.76	0.07	24.13	8.88	23.53	0.06
5/30/2018 8:49	24.94	7.26	21.64	0.03	24.48	10.3	23.95	0.04
5/30/2018 8:50	25.04	8.84	21.73	0.02	24.62	10.77	24.07	0.03
5/30/2018 8:51	24.9	9.43	21.74	0.01	24.44	11	24.14	0.02
5/30/2018 8:52	24.5	9.76	21.75	0	24.19	11.04	24.15	0.02
5/30/2018 8:53	27.27	10.54	25.59	0.05	31.4	13.54	30.58	0.07
5/30/2018 8:54	53.38	18.8	50.82	0	54.08	23.47	52.17	0.19
5/30/2018 8:55	54.96	22.63	51.49	0	54.67	24.32	51.98	0.3
5/30/2018 8:56	55.5	23.51	51.6	0	54.81	24.86	52.01	0.28
5/30/2018 8:57	55.18	23.9	51.48	0	54.79	24.91	51.91	0.26
5/30/2018 8:58	37.34	19.03	31.26	0	30.89	15.75	30.24	0.02
5/30/2018 8:59	24.74	12.63	21.73	0	24.67	12.06	24.35	0.01
5/30/2018 9:00	24.89	11.66	21.75	0	24.38	11.85	24.26	0.01
5/30/2018 9:01	25.12	11.1	21.69	0	24.95	11.52	24.07	0.01
5/30/2018 9:02	25.27	10.96	21.65	0	25.09	11.82	24.23	0.01
5/30/2018 9:03	43.51	16.13	42.18	0	48.02	20.94	46.14	0.2
5/30/2018 9:04	55.49	22.29	51.32	0	54.43	24.22	50.68	0.45
5/30/2018 9:05	55.64	23.89	51.39	0	54.64	24.84	51.13	0.37
5/30/2018 9:06	55.88	24.29	51.38	0	55.19	25.13	51.54	0.33
5/30/2018 9:07	53.32	23.78	47.65	0	48.3	22.67	45.36	0.17
5/30/2018 9:08	26.98	15.44	22.27	0	24.98	12.84	24.57	0.01
5/30/2018 9:09	24.49	12.35	21.92	0	24.75	12.05	24.32	0
5/30/2018 9:10	25.11	11.79	21.88	0	24.86	11.86	24.39	0

CYLINDER GAS AUDIT

WORK SHEET

5/30/2018 9:11	26.28	11.83	24.72	0	30.06	13.7	29.38	0
5/30/2018 9:12	52.84	19.83	50.74	0	54.01	23.67	50.78	0.4
5/30/2018 9:13	55.44	23.55	51.8	0	54.57	24.27	50.87	0.4
5/30/2018 9:14	55.21	24.18	51.83	0	54.96	24.55	51.27	0.4
5/30/2018 9:15	55.91	24.81	51.83	0	54.93	24.92	51.28	0.43
5/30/2018 9:16	60.13	33.47	58.81	0	69.06	44.58	66.38	0.2
5/30/2018 9:17	121.67	100.82	122.83	0	127.28	117.41	126.18	0.0
5/30/2018 9:18	126.97	118.85	124.81	0	128.57	122	126.97	0
5/30/2018 9:19	127.16	122	124.86	0	128.54	123.85	126.92	0
5/30/2018 9:20	134.9	134.05	136.58	0	150.3	149.71	148.82	0.03
5/30/2018 9:21	267.68	248.77	267.04	0	256.46	244.05	249.53	0.73
5/30/2018 9:22	281.85	269.38	272.47	0	268.18	260.33	261.78	0.23
5/30/2018 9:23	281.99	275.45	272.71	0	281.27	274.77	276.44	0.0
5/30/2018 9:24	282.22	277.85	272.68	0	281.83	276.44	276.41	0.0
5/30/2018 9:25	268.96	261.69	252.37	0	244.64	238.23	240.01	0
5/30/2018 9:26	136.49	153.75	127.94	0	130.77	136.8	128.46	0
5/30/2018 9:27	128.17	136.65	125.63	0	129.5	131.63	127.48	0
5/30/2018 9:28	127.67	133.58	125.47	0	129.47	130.25	127.6	0
5/30/2018 9:29	139.41	147.12	142.72	0	163.3	166.6	160.78	0
5/30/2018 9:30	272.44	257.11	269.77	0	281	271.1	275.75	0.0
5/30/2018 9:31	282.26	276.42	273.33	0	281.82	276.64	276.93	0.01
5/30/2018 9:32	273.91	267.31	259.65	0	253.12	245.85	248.29	0.01
5/30/2018 9:33	140.91	158.27	130.34	0	131.28	137.85	129.64	0
5/30/2018 9:34	128.27	139.46	126.07	0	129.69	132.68	127.97	0
5/30/2018 9:35	128.07	134.54	125.95	0	129.52	131.1	128.07	0
5/30/2018 9:36	137.05	145.37	139.46	0	157.99	162.93	156.23	0
5/30/2018 9:37	270.52	255.97	269.08	0	280.14	271.69	275.76	0.01
5/30/2018 9:38	282.61	276.8	273.56	0	282.18	276.91	277	0.01
5/30/2018 9:39	282.62	280.95	273.55	0	282.35	278.35	277.14	0
5/30/2018 9:40	282.9	282	273.7	0.04	280.71	276.23	275.69	0.78
5/30/2018 9:41	136	146.01	89.17	8.28	71.77	63.8	44.53	8.46

Client: DESERT VIEW POWER Location: Mecca Date: 5/30/2018

Unit No: Boiler 18.2
Data By: Dave Wonderly

Instrument	MOx ppm	NOx ppm Low Range	SO2 ppm Low Range	.ow Range	0	02 %	CO ppm Low Range	ow Range
Range	1	100	90	0		25	100	0
Gas Specification	Point 1	Point 2	Point 1	Point 2	Point 1	Point 2	Point 1	Point 2
Min	20	90	20	50	4	80	20	50
Max	30	09	30	90	9	12	30	09
Units	% FS	% FS	% FS	% FS	% 02	% 03	% FS	% FS
Gas Requirement	ppm NOx	xON mdd	SOS mdd	ppm SO2	% 02	% O2	DD mdd	ppm CO
Min	20	20	10	25	4	8	20	20
Max	30	09	15	30	9	12	30	09
Gas Used	24.7	55.5	12.5	27.1	4.4	9.46	25	55
% of Range	25%	26%	25%	54%	18%	38%	25%	22%
Status	OK	OK	УО	OK	OK	OK	OK	OK
Cylinder No.	CC499373	CC31709	CC499373	CC31709	CC230543	CC318217	CC499373	CC31709
							Ĺ	

nstrument	NOx ppm I	NOx ppm High Range	SO2 ppm	SO2 ppm High Range	CO ppm	CO ppm High Range
Range	5	500)5	200	4,	900
Gas Specification	Point 1	Point 2	Point 1	Point 2	Point 1	Point 2
Min	20	920	20	50	20	20
Max	30	09	30	09	30	09
Units	% FS	% FS	% FS	% FS	% FS	% FS
Gas Requirement	xON mdd	xON mdd	ppm SO2	SOS mdd	DD mdd	DD mdd
Min	100	250	100	250	100	250
Max	150	300	150	300	150	300
Gas Used	128.5	282	125	277	123.3	274
% of Range	76%	%95	25%	22%	25%	22%
Status	OK	NO	NO	OK	OK	ok
Cylinder No.	CC74949	CC169801	CC74949	CC169801	CC74949	CC169801



Pravair 5700 South Alameda Street Los Angeles, CA 90058 Tel: (323) 585-2154 Fax:(714) 542-6689

PGVPID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

WWW.ROSI

Praxair Order Number: 70480156

1/29/2018

2000 psig

Montrose Air Quality Services, LLC

1631 E. St. Andrew Pl.

Customer P. O. Number: Customer Reference Number Part Number Lot Number

Fill Date:

NI CO25MNS11EAS 70086802906

Cylinder Style & Outlet: Cylinder Pressure & Volume.

AS CGA 660

140 cu ft

Santa Ana, CA 92705

CO-25.0 NO-24.7 SO2-12.5 CC499373 Exp. 2/9/21

F22018

1. Co

		Certified Concentration:	Cylinder Pressure & Valume
Expiration Date:		2/9/2021	NIST Traceable
Cylinder Number	er:	CC499373	Analytical Uncertainty.
25.0	ppm	CARBON MONCXIDE	± 0.8 %
24.7	ppm	NITRIC OXIDE	± 0.7 %
12.5	ppm	SULFUR DIOXIDE	± 1.7 %
	Balance	NITROGEN	

NOx = 24.9 ppm

NOx for Reference Only

GMIS

Mean Tost Assay:

ALM 335505

Conc

O

0

0

Certification Information:

Certification Date: 2/9/2018

Term: 36 Months

Expiration Date: 2/9/2021

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not

Use this Standard if Pressure is less than 100 PSIG.

Analytical	Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

mponent:	CARBON	MONOXIDE	

Requested Concentration Certified Concentration Instrument Used Analytical Method

25 opn: 25 0 ppm Horiba VIA-510 S/N 576876015 NDIR

Last Multipoint Calibration 1/15/2018

Firs	1 Analys	is Dat	a:			Date:	2/2/2018	
Z:	D	R:	25.2	C:	24.9	Conc:	24.933	
R:	25.3	Z:	0	C:	25	Conc:	25.033	
Z:	D	C;	25	R:	25.3	Conc:	25.033	
LION	t: nor	ris.		Man	n Tart		25.00	

2. Component: NITRIC OXIDE

Requested Concentration Certified Concentration Instrument Used

25 ppm 24.7 ppm

Analytical Method Last Multipoint Calibration

Themo Electron 42i-LS S/N 1030645077 Chemiluminescence

1/12/2018

First	Analys	is Dat	Date:	2/2/2018			
	1,000						4.0.0.0.0
Z:	0	R	51	C:	24.7	Conc:	24.7
R:	51	Z.	0	C:	24.8	Conc:	24.8
Z:	0	C:	24 8	R:	51	Conc:	24.8
UOM	e pp	m		Mea	n Test	leesu-	24 767 nnm

3. Component: SULFUR DIOXIDE

Requested Concentration Certified Concentration Instrument Used Analytical Method

First Analysis Data:

0

101 6

UOM: ppm

Z: 0

12 ppm 12.5 ppm

Ametek 921CE S/N AW-921-S321 Ultraviolet Absorption

Last Multipoint Calibration 1/16/2018

C:

122 3 Conc: 12 375 123 1 Conc: 12.456 122.7 R: 101 3 Conc: 12.416

Mean Test Assay:

Reference Standard Type Ref Std. Cylinder # Ref Std Conc.

UOM; ppm

25.3 ppm Ref Std Traceable to SRM# 2635a SRM Sample # 58-E-34 SRM Cylinder # FF10666

Second Analysis Data: 2: 0 R: Conc R: n Conc: Z C C: 0

R:

Reference Standard Type SRM Ref. Std. Cylinder # CC2852 Ref Std Conc 51 00 ppm

Ref Std. Traceable to SRM# SRM Sample # 45-V-42 SRM Cylinder # CAL017897

Second Analysis Data: Date: 2/9/2018 Z 0 R: 51 C 24.6 24.648 50.8 Z: C: 24.5 24.548 2: 0 C: 245 R: 50.9 24.548 UOM: Mean Test Assay 24 582 ppm

Reference Standard Type CHAIS Ref. Std. Cylinder # CC423833 Ref. Std Conc 10 21 ppm Ref Std Traceable to SRM# PRM#C1194 SRM Sample # C1194310 SRM Cylinder # D506172

Second Analysis Data: 2/9/2018 0 124 3 Conc 12 512 0 C: 124.2 Conc: 12 502 Z: Ò C. R: 101 2 Conc: 12.572 UOM-12.528 ppm

Information contained herein has been prepared at your request by qualified experts within Praxair Districution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warrantly or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.

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PGVPID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Analyzed by

Henry Koung m

Certified by:

171

Amalia Real

information contained herein has been prepared at your request by qualified experts within Praxair Distribution, Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.



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5700 South Alameda Street Los Angeles, CA 90058 Tel: (323) 585-2154 Fax:(714) 542-6689

PGVPID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

AND MICHAELERY

Praxair Order Number: 70480156

Fill Date:

1/25/2018

Montrose Air Quality Services, LLC

Customer P. O. Number: Customer Reference Number: Part Number La Number

NI COSSMNS10FAS 70086802503

Cylinder Style & Outlet: Cylinder Pressure & Volume.

AS CGA 660

1631 E. St. Andrew Pl Santa Ana, CA 92705

Certified Concentration:

2000 psig 140 cu ft

CO- 55.0 No-55.5 502-271 CC 31709 EXP. 2/7/22 F22018

Expiration Date		2/7/2022	NIST Traceable
Cylinder Numb	er,	CC31709	Analytical Uncertainty:
55.0	ppm	CARBON MONOXIDE	±0.6 %
55.5	ppm	NITRIC OXIDE	± 0.7 %
27.1	ppm	SULFUR DIOXIDE	±1%
	Balance	NITROGEN	

NOx = 55.6 ppm

NOx for Reference Only

Certification Information:

Certification Date: 2/7/2018

Term: 48 Months

Expiration Date: 2/7/2022

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1 Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard Z=Zero Gas, C=Gas Candidate)

1. Component: CA	ARBON MONOXIDE
------------------	----------------

Requested Concentration 55 ppm Certified Concentration 55 0 opm Instrument Used Horiba VIA-510 S/N 576876015 Analytical Method NDIR Last Multipoint Calibration 1/15/2018

First Analysis Data 1/31/2018 Date: Z: 0 R: 502 C: 55 Conc 55 R: 50 4 7: 0 55 1 Conc 55 1 50.3 Z: 0 55 C: 55 R: Conc

UOM: 55 033 ppm ppm Mean Test Assay:

Reference Standard Type GMIS CC186877 Ref Std Cylinder# Ref Std Conc. 50 3 ppm Ref. Std. Traceable to SRM # 16780 SRM Sample # 04-1-41 SRM Cylinder # FF18402

Second Analysis Data Date: 0 Z: R: C Conc: 0 R: n 7. 0 0 Conc: Z: 0 0 C: 0 R: Conc: 0 UOM: ppm Mean Test Assay: 0 par

> SAM CC2852

51.00 ppm

CAL017897

1683b

45-V-42

2. Component: NITRIC OXIDE

Requested Concentration 55 pcm Certified Concentration 55.5 ppm Instrument Used

Themo Electron 42i-LS S/N 1030645077 Analytical Method Chemiluminescence

Last Multipoint Calibration 1/12/2018

First Analysis Data: 1/31/2018 Date: 0 55 4 Conc 55.4 Conc: 0 C; 55.5 51 Conc: 55.5 UOM: ppm Mean Test Assay: 55 467 ppm

Second Analysis Data: 2/7/2018 R: 51 55.573 C 55.5 Conc: C: 55 473 Conc Z Q C: 55.4 R: 50.9 55 473 Conc: UOM: ppm 55 506 ppm Mean Test Assay

SRM Sample #

SRM Cylinder #

Reference Standard Type

Ref. Std. Traceable to SRM #

Ref. Std. Cylinder #

Ref Std Conc.

Reference Standard Type NTRM Ref Std Cylinder# CC72598

48 58 ppm Ref. Std. Traceable to SRM # NTRM12070 SRM Sample # JOB NO 16055 N/A SRM Cylinder #

Second Analysis Data: 2/7/2018 Date: 0 R. 48 9 C: 27 2 Conc: 27.04 R: 48 8 Z 0 C: 27 2 27.04 Conc: 7 0 C: 27 2 R: 48 9 Conc: 27 04 UOM: Mean Test Assay: 27 04 ppm

3. Component: SULFUR DIOXIDE Requested Concentration

Certified Concentration Instrument Used Analytical Method

27 ppm 27 1 opm

Ametek 921CE S/N AW-921-S321 Ultraviolet Absorption

Last Multipoint Calibration 1/16/2018

First Analysis Data 1/31/2018 Date: 0 R: 486 27 052 27.1 Conc 48 7 R: Z: 0 C: 27 3 Conc: 27 251 Z: 0 27 152 C: 27.2 R: 48 7 Conc: Mean Test Assay: 27 152 ppm

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Page 1 of 2



Praxair

5700 South Alameda Street Los Angeles, CA 90058 Tel: (323) 585-2154 Fax:(714) 542-6689

PGVPID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Henry Koung

Certified by:

Amalia Real

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Praxair

5700 South Alameda Street Los Angeles, CA 90058

Tel:(323)585-2154 Fax:(714)542-6689

PGVP ID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

W. MKIN I KLATE

Montrose Air Quality Services, LLC

1631 E. St. Andrew Pl. Santa Ana. CA 92705

Praxair Order Number: 70478952

Customer PO Number:

Customer Reference Number:

Fill Date:

1/25/2018

Part Number:

Cylinder Style and Outlet

Cylinder Pressure and Volume:

NI CO125NS4E-AS

CGA 560

140 cu. ft.

Lot Number:

70086802507

2000 psig

CO-123.3 ppm

NOX-128.5 por SO2-125.0 pp

CC74949 EXP- 2-5-26

Certified Concentration: **Expiration Date:** 02/05/2026

Cylinder Number: 123.3 ppm 128.5

ppm 125 ppm Ralance

Expanded Uncertainty: CC74949 **CARBON MONOXIDE** ± 0.4 % NITRIC OXIDE ± 0.7 % SULFUR DIOXIDE + 10% **NITROGEN**

NOx ppm =

128.5 ppn

NOX for Reference Only

NIST Traceable

F27018 NOx ppm = 128.5 ppn

Certification Information: Certification Date: 2/5/2018

Tenn:

96 Months

Expiration Date: 02/05/2026

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1.

Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1 . Component: CARBON MONOXIDE

Requested Concentration 125 ppm Certified Concentration: 123.3 ppm

Instrument Used: HORIBA, VIA-510 576 876 015 Analytical Method: NDIR

Last Multipoint Calibration

01/02/2018

First A	nalysis I	Data:		Date:	01/29/2015	p-			
Z:	0	R:	102.2	C:	123.4	Conc:	123.3		
R:	102.3	Z:	0	C:	123.5	Conc:	123.4		
Z:	0	C:	123.5	R:	102.3	Conc:	123.3		
UOM:	ppm				Mean T	est Assau:	123.3	nom	

NITRIC OXIDE

Requested Concentration Certified Concentration:

Instrument Used Themo Electron 42i S/N 072602432C Analytical Method Chemiluminescence

Last Multipoint Calibration

01/29/2018

First A	nalysis D	Data:		Date:	01/29/2018			
Z:	0	R:	100.4	C:	128.4	Conc:	128.4	
R:	100.4	Z:	0	C:	128.3	Conc:	128.3	
Z:	0	C:	128.3	R:	100.4	Conc:	128.1	
UOM:	ppm				Mean T	est Assay:	128.3	ppm

3 . Component:

SULFUR DIOXIDE

Requested Concentration: 125 npm Certified Concentration: 125 ppm

Instrument Used: HORIBA, VIA-510, 5203551011 Analytical Method: NDIR

Last Multipoint Calibration

First A	nalysis [ata:				Date:	01/29/2018		
Z	0	R:	95.2	C:	125.6	Conc:	125.4		
R:	95.3	2:	0	C:	125.4	Conc:	125.2		
Z	0	C:	125.4	R:	95.3	Conc:	125.1		
UOM:	ppm				Mean T	est Assay:	125,3	ppm	

01/27/201

Lecon Koy Analyzed by:

Leeanna Rodriguez

Reference Standard Type: **GMIS** Ref. Std. Cylinder # CC243560 Ref. Std. Conc. 102.2 ppm Ref. Std. traceable to SRM #: 16790 SRM Sample #: 2145 SRM Cylinder # FF28593

Second	Analys	is Data:			Date:			
Z :	0	R:	0	C:	0	Conc:	0	
R.	D	Z:	0	C:	0	Conc:	0	
Z:	0	C	0	R:	0	Conc:	0	
UOM:	pom				Mean To	est Assay:	0	ppm

Reference Standard Type

Ref. Std. traceable to SRM #

Ref. Std. Cylinder # Ref. Std. Conc.

CC338497 100.4 ppm 1684b

NTRM

SRM Sample # 44-T-83 SRM Cylinder # FF9258

Secon	d Analysi	s Data	:			Date:	02/05/2018	
Z:	D	R:	100.4	C:	128.9	Conc:	128.9	
R:	100.3	Z:	0	C:	128.7	Conc:	128.7	
Z: \	0	C:	128.7	R:	100.3	Conc:	128.7	
UOM:	ppm				Mean To	est Assay:	128.8	ppm

Reference Standard Type

Ref. Std. Cylinder #:

nd Analysis Data

Ref. Std. Conc: Ref. Std. traceable to SRM #:

SA15531 95.17 ppm 120702 12070204

SRM Sample #: SRM Cylinder#

Date: 02/05/2018 C: Conc: 124.7 C: 124.6 Conc 124.6

0 R: 95.2 R: Z: 95.1 0 7 C: R: Conc 0 124.6 95.1 124.7 UOM Mean Test Assay: DDM 124.7 pom

Certified by:

Quinn Hailes

Information contained herein has been propared at your request by qualified experts within Praxeir Distribution. Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specified analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion, and risk of the user. In no event shall the liability of Praxair Distribution, Inc., arising out of the use of the information contained herein exceed the fee established for providing such information

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Praxair 5700 South Alameda Street Los Angeles, CA 90058 Tel:(323)585-2154 Fax:(714)542-6689

PGVP ID: F22018

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

W MUNIRUSE

Praxair Order Number 70478952

Fill Date 1/25/2018

Montrose Air Quality Services, LLC 1631 E. St. Andrew Pl.

Customer PO Number

Part Number: NI CO275NS1E-AS

istomer Reference Number:

Lot Number 70086802508

2000 psia

Cylinder Style and Outlet

CGA 660 140 cu #

Santa Ana, CA 92705

NOX-282 ppm

502-277 ppm CC 169 801

Cylinder Pressure and Volume Certified Concentration: NIST Traceable Expiration Date: 02/05/2026 **Expanded Uncertainty:** Cylinder Number: CC169801 ppm CARBON MONOXIDE ± 0.7 % NITRIC OXIDE ± 0.3 % 282 ppm ppm SULFUR DIOXIDE ± 0.6 % NITROGEN Balance

282 ppm

NOX for Reference Only

ENP-2-5-26 NOx ppm = Certification Information:

Certification Date 2/5/2018

Term: 96 Months

Expiration Date 02/05/2026

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1 Do Not Use this Standard if Pressure is less than 100 PSIG.

F22018

A sa cel	lessi nel	Data:	
zınaı	VIICUI	Dula.	

(R=Reference Standard, Z=Zero Gas C=Gas Candidate)

1	. Com	onent:		CARBON MONOXIDE								
		ested Cond		n		275 ppm 274 ppm						
	Certif	ied Concer	tration									
	instru	ment Used				HORIBA.	VIA-510 576	876 015				
	Analy	rtical Metho	ď			NDIR						
	Last	Multipoint C	alibratio	in.		01/02/2018						
	First	Analysis I	Data:				Date:	01/29/2015				
	Z:	0	R:	248 5	C:	275	Conc:	275				
	R:	248 4	Z:	0	C:	274	Conc:	274				
	Z:	0	C:	274	R:	248 4	Conc:	274				

					CHOZIZON	,			
First A	nalysis [Data:				Date:	01/29/2015		Ī
Z:	0	R:	248 5	C	275	Conc:	275		
R:	248 4	Z:	0	C:	274	Conc:	274		
Z:	D	C:	274	R:	248 4	Conc:	274		
UOM:	ppm	6			Mean Ti	est Assay:	274	ppm	
									-

2 . Component:	NITRIC OXIDE

Requested Concentration 275 ppm Certified Concentration 282 ppm Instrument Used

Themo Electron 42/ S/N 072602432C Analytical Method Chemiluminescence Last Multipoint Cal

	ar de contra de				01/29/2010			-
First A	nalysis I	Data:				Date:	01/29/2018	
Z:	0	R:	253	C:	283	Conc:	283	
R:	253	Z:	0	C:	284	Conc:	284	
Z :	0	C:	284	R:	253	Conc:	281	
UOM:	con				Mean Te	est Assay:	283 nom	

4.71	
3 - Component:	SULFUR DIOXIDE

Requested Concentration 275 ppm Certified Concentration 277 ppm instrument Used. HORIBA, VIA-510 5203551011 Analytical Method Last Multipoint Calibration

D. Se 19 C. 19 C	ottore with the	-	-		UNIZMEDIO	3		
First A	nalysis I	Data:				Date;	01/29/2018	
Z:	0	R:	495.4	C:	276.6	Conc:	277	
R:	495 4	Z:	9	C:	276.6	Conc:	277	
Z:	0	C	276.6	R:	495.4	Cone:	276	
UOM:	ppm				Mean To	est Assay:	276 p	pm

Reference	e Standard Type	GMIS
	Cylinder #	CC243385
Ref Std	Conc.	248.5 ppm
Ref Std	traceable to SRM #	2636a
	SRM Sample #	57-E-28
	CDM C. dinder W.	-

Second	Analys	is Data:				Date:	
2:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R.	0	Conc:	0
UOM:	ppm				Mean To	est Assay:	0 ppm

Reference Standard Type	GMIS
Ref. Std. Cylinder #	CC2744
Rel. Std. Conc	253 2 ppm
Ref. Std. traceable to SRM #	1685b
SRM Sample #	43-M-28
SRM Cylinder#	FF20734

Second	Analys	Is Data:				Date:	02/05/2018	
Z:	0	R:	253	C:	281	Conc:	280	
R:	254	Z:	0	C:	282	Conc:	281	
Z:	0	C:	282	R:	254	Conc:	280	
UOM:	ppm				Mean Te	est Assay:	281	ppm

Referen	ce Standard Type	GMIS
Ref Std	Cylinder #	CC121190
Ref Std	Conc	495.4 ppm
Ref. Std	traceable to SRM #	1661a
	SRM Sample #	94-1-18
	SRM Cylinder #:	EE22304

Secon	d Analysi	is Data				Date:	02/05/2018	
Z:	0	R:	495.4	C;	276.2	Conc:	276	
R:	495.2	Z:	0	C:	276.6	Conc:	277	
Z:	0	C:	278.6	R:	495.2	Conc:	277	
UOM:	non				Mean T	est Assay:	277	nom

Analyzed by:

Leaven Hay Leeanna Rodriquez

Certified by:

Quinn Hailes

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AC 7-13-18



Pravair 5700 South Alameda Street Los Angeles, CA 90058 Tel: (323) 585-2154 Fax:(714) 542-6689 PGVPID: F22016

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

SCEC AIR QUALITY

1631 E ST ANDREW PLACE

Expiration Date:

Cylinder Number:

8.22

4.40

%

%

Balance

Praxair Order Number: 33765546

Customer P. O. Number: GARY

Fill Date: 2/9/2016 Part Number:

NI CD8.505E-AS

Lot Number: 109504002

Cylinder Style & Outlet:

CGA 580 AS

CA 927050

Customer Reference Number:

2/16/2024

CC230543

OXYGEN

NITROGEN

CARBON DIOXIDE

Certified Concentration:

NIST Traceable

Analytical Uncertainty:

± 0.6 %

± 0.9 %

Cyinder Pressure & Colume:

147 cu ft 2000 psig

02 4,40 CO28.22 CC230543 EXPOR/16/24 FZZ016

Certification Information:

Certification Date: 2/16/2016

Term: 96 Months

Expiration Date: 2/16/2024

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not

Use this Standard if Pressure is less than 100 PSIG.

O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zerc Gas, C=Gas Candidate)

2/16/2016

8 21

8.23

8.23

8 223 %

1. Component: CARBON DIOXIDE

Requested Concentration Certified Concentration Instrument Used:

8.5 % 8 22 %

Analytical Method Last Multipoint Calibration Horiba VIA-510 S/N 20C194WK

NDIR 1/30/2016

First Analysis Data: Conc: n R. 987 8.21 C: 8.23 Conc: R: 9 87 7. 0 C: R: 9.87 Conc: C: 8.23 7. 0 Mean Test Assay: UOM:

2. Component: OXYGEN

Requested Concentration Certified Concentration Instrument Used: Analytical Method. Last Multipoint Calibration 44% 4 40 % OXYMAT SE PARAMAGNETIC 1/29/2016

2/16/2016 First Analysis Data: Date: 44 2: Ö 10 C 44 Conc: 44 0 C: 4.4 Conc: R: 10 Z: 441 C: 4 41 R 10 Conc: Z: 4.403 % Mean Test Assay: UOM: 94

Analyzed by:

Jose Vasquez

GMIS Reference Standard Type: SA17695 Ref. Sid. Cylinder # 9.87% Ref Sld Conc. Ref Std Traceable to SRM# 1674b SRM Sample # 7-H-07 SRM Cylinder # FF10631

Seco	nd Ana	alysis D	ata:			Date:		
Z:	0	R:	O	C:	0	Conc:	0	
R:	0	Z:	0	C:	D	Conc:	0	
Z:	0	C:	0	R:	0	Conc:	0	
JOM	: %			Mear	Test	Assay:	0%	

Reference Standard Type GMIS CC240893 Ref. Sld. Cylinder # Ref. Std Conc. 10 00% Ref. Std. Traceable to SRM# 26584 SRM Sample # 72-D-28 CAL016862 SRM Cylinder #

Seco	nd An	alysis D	ata:			Date:		
Z:	0	R:	0	C:	0	Conc:	0	
R:	0	Z:	0	C:	0	Conc:	0	
Z:	0	C:	0	R:	0	Conc:	0	
UOM	: %			Mear	n Test	Assay:	0 %	

Certified by:

Ying Yu

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PGVPID: F22016

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information:

PRAXAIR WHSE SANTA ANA CA

1545 E EDINGER AVE

SANTA ANA

CA 927050

Praxair Order Number: 34089921

Customer Reference Number:

Customer P. O. Number: 05989744

Cartified Concentration.

Fill Dage: Pari Number:

4/8/2016 NI CD1905E-AS

Lot Number. 109609903

Cylinder Style & Onller AS

CGA 590 Cylinder Pressure & Volume: 140 cu ft

02-9.46%. CO2-18.80%. CC 318-217 Exp 4/15/24 F22016

		Cerujiea Concentration:		
Expiration Date		4/15/2024	NIST Traceable	
Cylinder Number	er:	CC318217	Analytical Uncertainty:	
18.80	%	CARBON DIOXIDE	± 0.4 %	
9.46	%	OXYGEN	± 0.5 %	
Balance		NITROGEN		

Certification Information:

Certification Date: 4/15/2016

Term: 96 Months

Expiration Date: 4/15/2024

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Do Not Use this Standard if Pressure is less than 100 PSIG.

O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: CARBON DIOXIDE

Requested Concentration 19% Certified Concentration: 18 80 %

Instrument Used Horiba VIA-510 S/N 20C194WK Analytical Method NDIR

Last Multipoint Calibration 3/24/2016

First Analysis Data: Date: 4/15/2016 R: 19.99 C: 188 Conc 18 809 R: 19.98 0 18 79 Conc: 18 799 20 R: Conc: 18 799 UOM: Mean Test Assay: 18 803 %

2. Component: OXYGEN

Requested Concentration 95% Certified Concentration 9 46 % instrument Used OXYMAT SE Analytical Method PARAMAGNETIC Last Multipoint Calibration 3/24/2016

First Analysis Data: Date: 4/15/2016 Z: 0 R: 10 C: 9 47 Conc: 9.467 R: 10 01 7 0 9 46 Conc 9.457 Z: 0 C: 9 47 R 10 9.467 UOM: Mean Test Assay: 9 464 %

Analyzed by

Ying Yu

Reference Standard Type GMIS Ref. Std. Cylinder # CC243865 Ref Sta Conc 20 00% Ref. Std. Traceable to SRM# N/A SRM Sample # NA SRM Cylinder # RGM#CC28033

Second Analysis Data Date: R: 0 D Conc-O Conc: 0 Z: 0 0 Conc: 0 0/ UOM: Mean Test Assay.

Reference Standard Type GMIS Ref. Std Cylinder # CC187493 Ref Std Conc 10.00% Ref Std Traceable to SRM# 2658a SRM Sample # 72-D-28 SRM Cylinder # CAL016862

Second Analysis Data: Date: 7: 0 0 R 0 Conc: Ö Z: 0 0 2: D C R. 0 Conc: UOM: Mean Test Assay: 0 %

Certified by:

asquez

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If you have any questions, please contact one of the following individuals by email or phone.

Name: Mr. Dave Wonderly
Title: Client Project Manager

Region: Southwest

E-Mail: DWonderly@montrose-env.com

Phone: (714) 279-6777

Name: Mr. Matt McCune

Title: Regional Vice President

Region: Southwest

E-Mail: MMccune@montrose-env.com

Phone: (714) 279-6777

